

## REMARKS

Claims 1-28 are pending in the application. Claims 5, 6, 8-10, and 12-16 have been withdrawn pursuant to a restriction/election of species requirements. No claims are presently allowed.

## Claim Rejections – 35 U.S.C. § 102

Claims 1-4, 7, 11, 19, 22, 23, and 25-28 have been rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Tsang et al. (US 4,605,595).

This same rejection was asserted in the office action of 01/06/2006. In response, Applicants amended claims 1 and 22 on 04/05/2006 to overcome the rejection. The rejection was withdrawn in the office action of 05/30/2006, which stated that “Tsang does not disclose the composite material comprising 60 to 95% by volume of the polymeric matrix.” (Office action of 05/30/2006, page 2, lines 2-4). Applicants have not made any subsequent amendments, so reassertion of the same rejection would appear to be unwarranted, though the Examiner made additional remarks in this rejection. Applicants’ prior response to this rejection is reproduced below, followed by additional remarks.

In order to make a *prima facie* case of anticipation, the reference must disclose each limitation of the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q.2d 1051, 1053, 814 F.2d 628, 631 (Fed. Cir. 1987); MPEP 2131. Among other deficiencies, the reference does not disclose the limitation in claims 1 and 22 that the article comprises from about 60 to about 95 vol.% of the polymeric matrix (as stated by the Examiner on 05/30/2006, page 2, lines 2-4). Tsang discloses the weight percentages of the ingredients (Fig. 2) but not their densities. Given that the highest disclosed weight percentage of binder is 40 wt.% (col. 3, line 26) and the high amounts of fillers used, it appears that 60 vol.% binder is not disclosed.

In the present rejection, the Examiner stated that the claims do not preclude the polymeric matrix from having inorganic fillers and that therefore the slurry of Tsang reads on the claimed polymeric matrix (Office action of 08/10/2007, page 6, lines 20-22).

Although claim 1 does not preclude the presence of inorganic fillers, any such filler is not a part of the volume fraction of polymeric matrix. It is known in the field of composites that the matrix is a continuous phase surrounding the other components (e.g., fillers) of the composite.

In attached article “Composite material” *McGraw-Hill Encyclopedia of Science and Technology*

(9<sup>th</sup> ed. 2002), it is stated that major constituents of composites are fibers, particles, laminae or layers, flakes, fillers, and matrices (paragraph bridging pages 508-509). The matrix is a separate constituent from any filler, and the filler is not a part of the matrix. The recited vol% of the polymeric matrix in claim 1 refers to the amount of the polymer only. Further, even though a claim is open by use of “comprising” in the preamble, it does not mean that each of the recited elements is open to anything that is not specifically excluded from the element. To read open claims in the manner suggested by the Examiner would render the elements of any such claim to be meaningless. In the present case, the Examiner’s interpretation would result in 60 vol% polymeric matrix reading on 0.001 vol% polymeric matrix and 59.999 vol% anything else.

Claims 2-4, 7, 11, 19, 23, and 26 depend from and contain all the limitations of claim 1, and claims 25, 27, and 28 depend from and contains all the limitations of claim 22. The arguments regarding the lack of *prima facie* for claims 1 and 22 are applicable to claims 2-4, 7, 11, 19, 23, and 25-28.

Further, as to claims 23 and 25, the claims recite the phrase “consists of” in the preamble. This phrase excludes the filler, friction modifier, and reinforcing fiber of Tsang. The Examiner stated that the catalyst, curing agent, curing additive, or release agent recited in these claims “read pretty much on anything which could include a filler, so claims 23 and 25 are essentially as open as claim 1” (page 7, lines 4-5).

There is no explanation as to how catalyst, curing agent, curing additive, or release agent encompasses anything. However, the Examiner’s own statement admits that it actually does not read on everything. If it read on “pretty much anything,” (emphasis added) then there must be something it does not read on. The filler of Chang is not a catalyst and has nothing to do with curing or releasing. Thus, the filler is excluded from the scope of these claims.

As to claims 26-28, the claims recite a more specific range that is also not disclosed in Tsang.

#### Claim Rejections – 35 U.S.C. § 103

Claims 17, 18, 20, 21, and 24 have been rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Tsang. This rejection was also asserted in the office action of 01/06/2006 and subsequently withdrawn.

In order to make a *prima facie* case of obviousness, each claim limitation must be

disclosed in the references (MPEP 2143.03). As above, the reference does not disclose the limitation in claim 1 (claims 17, 18, and 20 dependent thereon) and 21 (claim 24 dependent thereon) that the article comprises from about 60 to about 95 vol.% of the polymeric matrix. As all the claim limitations of claims 1 and 21 are not disclosed in the reference, a *prima facie* case of obviousness has not been made.

Further, as to claim 24, the claim recites the phrase “consists of.” This phrase excludes the filler, friction modifier, and reinforcing fiber of Tsang.

The above arguments regarding the 102(b) rejection also apply.

Claims 1-4, 7, 11, and 17-28 have been rejected under 35 U.S.C § 103(a) as being allegedly unpatentable over Yang et al. (US 5,516,592) in view of Akiyama et al. (US 4,713,277).

Neither Yang nor Akiyama discloses the limitation in claims 1 and 22 that the article comprises from about 60 to about 95 vol.% of the polymeric matrix. The hardness-reinforcement composition of Yang contains both resin and inorganic powder. The vol% of the polymeric matrix is not disclosed. Akiyama does not disclose any resin.

The Examiner stated that the combination would comprise about 90 vol% of the reinforcing composition (page 5, lines 15-17). However, the reinforcing composition contains inorganic powder. The vol% of the resin alone is not disclosed. As all the claim limitations of claims 1 and 21 are not disclosed in the reference, a *prima facie* case of obviousness has not been made.

Further, as to claims 23-25, the claims recite the phrase “consists of.” This phrase excludes the inorganic powder of Yang.

As to claims 26-28, the claims recite a more specific range that is not disclosed in the references.

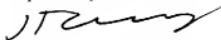
The above arguments regarding the 102(b) rejection also apply.

In view of the foregoing, it is submitted that the application is now in condition for allowance.

In the event that a fee is required, please charge the fee to Deposit Account No. 50-0281,

and in the event that there is a credit due, please credit Deposit Account No. 50-0281.

Respectfully submitted,



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